THAT WHICH IS CLAIMED IS

1. A method of calculating the discrete cosine transform (DCT) of blocks of pixels of a picture, characterized in that it comprises the steps of defining first subdivision blocks called *range* blocks, having a fractional and scaleable size $N/2^i * N/2^i$, where i is an integer number, in respect to a maximum pre-defined size of $N*N$ pixels of blocks of division of said picture, referred to as *domain* blocks, shiftable by intervals of $N/2^i$ pixels, and of calculating the DCT on 2^i *range* blocks of subdivision of a *domain* block of $N*N$ pixels of said picture, in parallel.

2. The method according to claim 1, characterized in that the calculation of the DCT in parallel on all *range* blocks of subdivision of a certain *domain* block is carried out in a hardware structure and comprises the steps of:

a) ordering the pixels in function of a subdivision in *range* blocks of a certain dimension by rearranging the input pixels in a number 2^i of sequences or vectors of 2^i components;

b) calculating in parallel 2^i monodimensional DCTs by processing said vectors defined in the preceding step a);

c) arranging the output sequences of the monodimensional DCTs relative to said 2^i vectors;

d) completing the calculation in parallel of 2^i bidimensional DCTs by processing said output sequences of monodimensional DCTs produced in step c);

e) arranging the output sequences of bidimensional DCTs generated in step d) in a number 2^i of vectors of bidimensional DCT coefficients.

3. The method according to claim 2, characterized in that the calculation in parallel of said 2^i monodimensional DCTs in step b) and the completion of the parallel calculation of 2^i bidimensional DCTs of step d) are performed by subdividing the sequences resulting from step a) and from step c), respectively, in groups of scalar elements, calculating the sums and differences thereof by way of adders and subtractors and by reiterately multiplying the sum and difference results by respective coefficients until completing the calculation of the relative DCT coefficients, respectively monodimensional and bidimensional.

4. A method of compressing data of a picture to be stored or transmitted through a fractal coding, characterized in that the fractal transform is carried out in the *domain* of the discrete cosine transform (DCT) through the following steps:

subdividing a picture in blocks of pixels of said two distinct type of blocks as defined in claim 1;

parallely calculating the discrete cosine transform (DCT) of all the 2^i *range* blocks and of a relative *domain* block;

classifying the transformed *range* blocks according to their relative complexity represented by the sum of the values of the three AC coefficients;

applying the fractal transform in the DCT *domain* to the data of the *range* blocks whose complexity classification exceeds a pre-defined threshold and storing only the DC coefficient of the *range* blocks with a complexity lower than said threshold, identifying a relative *domain* block to which the *range* block in a transformation belongs that produces the beset fractal approximation of the *range* block;

calculating a difference picture between each *range* block and its fractal approximation;

quantizing said difference picture in the DCT *domain* by using a quantization table preestablished in function of the characteristics of human sight;

coding said difference picture quantized by a process based on the probabilities of the quantization coefficients;

storing or transmitting the coding code of each *range* block compressed in the DCT *domain* and the DC coefficient of each uncompressed *range* block.

add A1

add B'